

**SENSORS BASED ON GIANT PLANAR HALL EFFECT IN DILUTE
MAGNETIC SEMICONDUCTORS**

ABSTRACT OF THE DISCLOSURE

Ferromagnetic semiconductor-based sensor devices, including sensors for detecting pressure changes and sensors for detecting magnetic fields, such as switching events in a magnetic recording medium. The pressure sensors of the present invention detect pressure changes using magnetoresistive measurement techniques, and in particular GPHE techniques. Magnetic field detection sensors such as magnetic switching detection sensors include ferromagnetic semiconductor-based materials that provide enhanced sensitivity relative to known materials and techniques. Such magnetic switching detection sensors according to the present invention are particularly useful as a read head sensor for HDD and *other magnetic storage technologies*.

WC 9058388 v1